



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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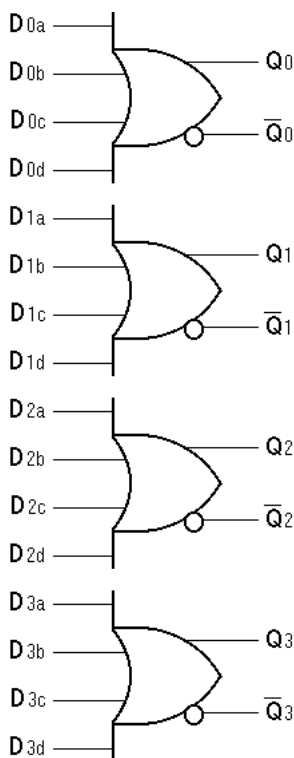
**FEATURES**

- 500ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- True and complementary outputs
- Fully compatible with industry standard 10KH, 100K I/O levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E101
- Available in 28-pin PLCC package

**DESCRIPTION**

The SY10/100E101 are quad 4-input OR/NOR gates designed for use in new, high-performance ECL systems. The E101 features both true and complementary outputs.

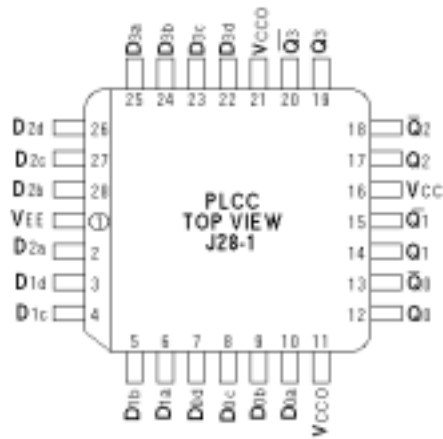
**BLOCK DIAGRAM**



**PIN NAMES**

Pin	Function
D <sub>na</sub> , D <sub>nb</sub> , D <sub>nc</sub> , D <sub>nd</sub>	Data Inputs
Q <sub>0</sub> -Q <sub>3</sub>	True Outputs
Q̄ <sub>0</sub> -Q̄ <sub>3</sub>	Inverting Outputs
V <sub>CC0</sub>	V <sub>CC</sub> to Output

**PACKAGE/ORDERING INFORMATION**



**28-Pin PLCC (J28-1)**

**Ordering Information<sup>(1)</sup>**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E101JI	J28-1	Industrial	SY10E101JI	Sn-Pb
SY10E101JITR <sup>(2)</sup>	J28-1	Industrial	SY10E101JI	Sn-Pb
SY100E101JI	J28-1	Industrial	SY100E101JI	Sn-Pb
SY100E101JITR <sup>(2)</sup>	J28-1	Industrial	SY100E101JI	Sn-Pb
SY10E101JC	J28-1	Commercial	SY10E101JC	Sn-Pb
SY10E101JCTR <sup>(2)</sup>	J28-1	Commercial	SY10E101JC	Sn-Pb
SY100E101JC	J28-1	Commercial	SY100E101JC	Sn-Pb
SY100E101JCTR <sup>(2)</sup>	J28-1	Commercial	SY100E101JC	Sn-Pb
SY10E101JY <sup>(3)</sup>	J28-1	Industrial	SY10E101JY with Pb-Free bar-line indicator	Matte-Sn
SY10E101JYTR <sup>(2, 3)</sup>	J28-1	Industrial	SY10E101JY with Pb-Free bar-line indicator	Matte-Sn
SY100E101JY <sup>(3)</sup>	J28-1	Industrial	SY100E101JY with Pb-Free bar-line indicator	Matte-Sn
SY100E101JYTR <sup>(2, 3)</sup>	J28-1	Industrial	SY100E101JY with Pb-Free bar-line indicator	Matte-Sn

**Notes:**

1. Contact factory for die availability. Dice are guaranteed at T<sub>A</sub> = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

**LOGIC EQUATION**

$$Q_n = D_{na} + D_{nb} + D_{nc} + D_{nd}$$

**DC ELECTRICAL CHARACTERISTICS<sup>(1)</sup>**

$V_{EE} = V_{EE}(\text{Min.})$  to  $V_{EE}(\text{Max.})$ ;  $V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	$T_A = -40^\circ\text{C}$			$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
$I_{IH}$	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	$\mu\text{A}$
$I_{EE}$	Power Supply Current	—	—	—	—	—	—	—	—	—	—	—	—	mA
	10EL	—	30	36	—	30	36	—	30	36	—	30	36	
	100EL	—	30	36	—	30	36	—	30	36	—	35	42	

**Note:**

1. Specification for packaged product only.

**AC ELECTRICAL CHARACTERISTICS<sup>(3)</sup>**

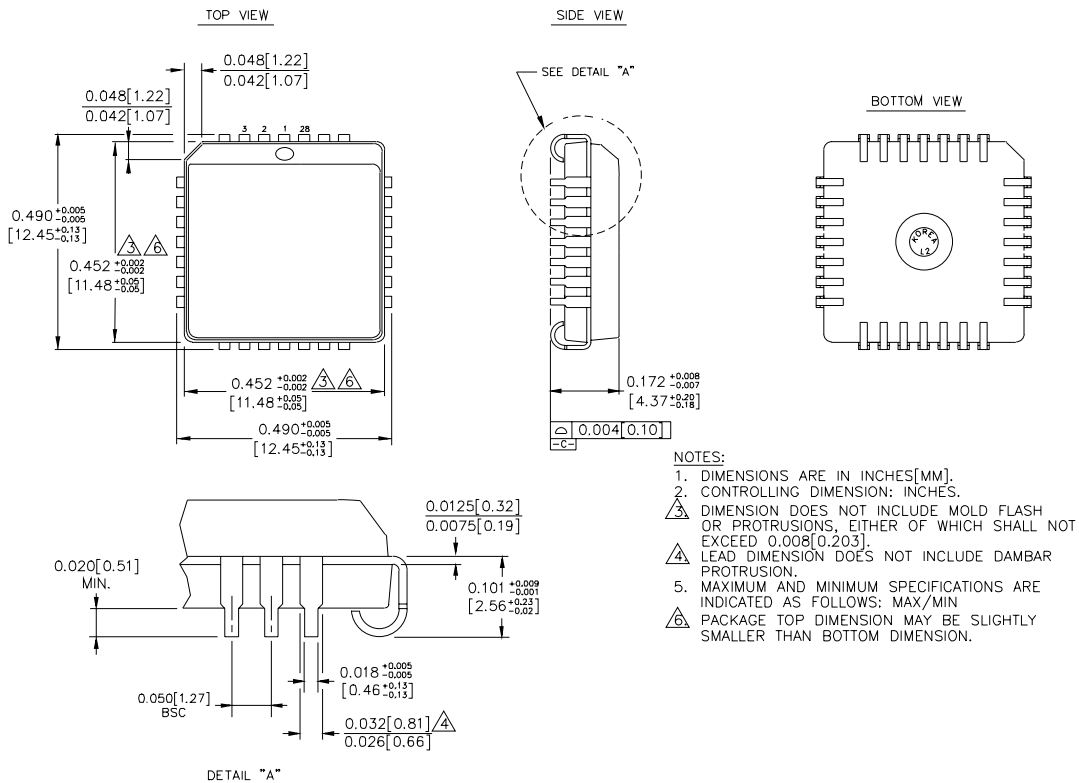
$V_{EE} = V_{EE}(\text{Min.})$  to  $V_{EE}(\text{Max.})$ ;  $V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	$T_A = -40^\circ\text{C}$			$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
$t_{PD}$	Propagation Delay to Output D to Q	150	—	550	200	350	500	200	350	500	200	350	500	ps
$t_{skew}$	Within-Device Skew <sup>(1)</sup>	—	50	—	—	50	—	—	50	—	—	50	—	ps
	Within-Gate Skew <sup>(2)</sup>	—	25	—	—	25	—	—	25	—	—	25	—	ps
$t_r$ $t_f$	Rise/Fall Time 20% to 80%	275	—	625	300	380	575	300	380	575	300	380	575	ps

**Notes:**

1. Within-device skew is defined as identical transitions on similar paths through a device.
2. Within-gate skew is defined as the variation in propagation delays through a single gate when driven from its different inputs.
3. Specification for packaged product only.

**28-PIN PLCC (J28-1)**



Rev. 03

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